

Pin/Thrum Love: Morph parenthood and nutlet yield
in the distylous borage Amsinckia grandiflora

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Amsinckia grandiflora is a federally-listed endangered annual forb. Earlier work by other researchers indicated this distylous species to be self-incompatible, although our field observations suggested otherwise. Therefore, we performed a greenhouse pollination experiment, which consisted of four treatments on each maternal flower morph: a passive self-pollination (in which the flowers were not manually pollinated), an active (manual) self-pollination, an intramorph pollination, and an intermorph pollination. For all manual pollinations, the petals of the flowers with the connate filaments were removed and the anthers were rubbed onto the appropriate stigma. Nutlets were collected when mature. Our preliminary statistical analysis indicates that within any given treatment, there were no differences between maternal pin and thrum nutlet outputs. Maternal pin intermorph pollinations produced significantly more nutlets compared to all of the active self- and intramorph pollinations. However, substantial nutlet production was observed in active self- and intramorph pollinations. Passive self-pollinations resulted in almost zero nutlet output, statistically lower than all other treatments. The observation that both active self- and intramorph pollinations resulted in substantial nutlet output contradicts the earlier finding that this species is self-incompatible. (Work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.)